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(54) 【発明の名称】 管体耐圧閉塞機構

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(57) 【特許請求の範囲】
【請求項 1】 受板と押板との間に半径方向に屈曲膨出するようにされたリング状シール材を介装せしめて螺合軸材に軸装し、該螺合軸材に螺合されたナット部材により前記押板を受板に向けて押圧し上記リング状シール材を屈曲膨出させて管体内面に圧着シールさせるようにしたものにおいて、上述した螺合軸材に対しその周側に複数個の係着板を伸縮性連結材で連結し略所定の間隔を採って配設するようにした係着手段を前記ナット部材により上記リング状シール材と共に係脱操作するように設けたことを特徴とする管体耐圧閉塞機構。
【請求項 2】 受板が螺合軸材に固定され、押板と係着手段との間に介装受部材を設け、該介装受部材に係着手段における係着板の基端を支承せしめ、ワッシャ部材を介してナット部材の押圧緊締力を前記係着板に作用させる

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ようにした請求項 1 に記載の管体耐圧閉塞機構。
【請求項 3】 螺合軸材に頭部を形成し、該頭部に係着手段における係着板の基端側を支承せしめ、該係着板の遊端側に受板を接合すると共にリング状シール材および押板とナット部材を上記螺合軸材に軸装し、前記受板と押板との間におけるリング状シール材の内部にシール材と該シール材を圧縮して受板と螺合軸材との間隙をシールするためのスペーサーを介装した請求項 1 に記載の管体耐圧閉塞機構。
【請求項 4】 シール材を圧縮して受板と螺合軸材との間隙をシールするためのスペーサーと複数個の係着板を連結し略所定の間隔を採って配設するための伸縮性連結材とが一体の弾性材で形成された請求項 3 に記載した管体耐圧閉塞機構。
【請求項 5】 押板が管体内径より大径として形成され、

該押板と管端との間にゴム質の如きによる防塵カバーを介装せしめ、前記押板から管体の外部に突出した螺合軸材に螺合したナット部材を締め込むことにより上記した防塵カバーが管端と押板との間に挟み込まれリング状シール材の屈曲膨出による管体内面接合シール以前に押板が管端に接合固定化することを防止すると共に管体より外部土砂などが内部に進入することを防止するようにしたことを特徴とする請求項1に記載の管体耐圧閉塞機構。

【発明の詳細な説明】

「発明の目的」

本発明は管体耐圧閉塞機構に係り、少くとも数 kg/cm^2 以上、一般的に $10\text{kg}/\text{cm}^2$ 以上のような高い圧力条件においても安定した閉塞シールをなすことのできる管体耐圧閉塞機構を提供しようとするものである。

（産業上の利用分野）

各種配管の管端部あるいは中間部などにおいて管内の気体または液体の高圧条件下で的確な閉塞シールをなし、あるいは管体閉塞シール条件下で管内流体を適宜に取出し、更には試験、測定するような目的で使用する機構。

（従来の技術）

ガスその他の気体やその他の液体を供給ないし排出し、あるいはこれらの流体に粉粒物その他を添加した状態で搬送するような場合に配管を利用することは古くから行われて来たところであり、今日における生活ないし作業環境は斯うした配管管路の輻湊したものとなっている。従ってこのような配管管路においてその内部流体の流動を停止ないし制限する必要の存することも明かで、このためにバルブなどの管路中に組込んで配置された機器が採用されているが、そうした機器の存しない条件下においても閉塞しなければならないことが多い。即ち上記のような供給、排出などに用いられる配管は相当の長距離に亘るのが普通で、そうした長距離且つ巨大な設備においても随所にバルブなどを設置するには莫大な機器を必要とすると共に折角の流圧を甚だしく低下するから、極く限られた地点にのみ設けられているのが普通で、しかもそのような長大な設備において適宜の位置で工事し、試験測定することが要請され、このような場合にはそうした管路の任意の位置で閉塞することが必要となる。

従来このようなバルブなどによらない管路の閉塞手段としては一般的に詰物をなすことであるが、この木栓などの詰物による閉塞は工数が多く、しかも不完全である。そこでこのような従来一般のものの不利を解消すべく本発明者等は実開昭56-80974や、特開昭62-206498などの技術を提案している。即ち受板と押板の間に断面C形のリング状シール材を介装し、このリング状シール材を該シール材および前記受板、押板の中心部に挿嵌されたボルト（ないし螺管）に対するナットの回動で緊締

し、リング状シール材をU形に彎曲膨出させて管内をシールするものであり、この技術によれば管体の随所に適用して閉塞することができ、しかもその操作が前記ナットによる平易な操作力で、的確なシール閉塞を行い得る。

（発明が解決しようとする課題）

ところが上記のような従来のものにおいて、その適用される管体の内面は平滑であり、しかも近時においては斯うした管体を利用して供給されるガスや水などの流体における流圧は次第に高いものとなりつつある。即ち流体圧が高くなることにより効率的な流体の供給、排出をなすことが可能となることは明かであり、一方今日における住宅などの密集ないし居住地域の拡大化は既存設備における設計範囲を超えて前記流体を供給排出することが要請されつつある。特に既存設備は経年によって老朽化し、配管自体を更新すべき状態となりつつあり、そうした老朽化配管を掘出して更新すべきところ、そのような工事自体が著しく大工事であり、しかもそうした既設配管管路上は交通施設や構築物が設定されていて、そのような設備の全体を破壊しなければ該工事を実施できないような設置当初で予想し得ない変化となっているのが一般で、事実上改修更新工事を実施できない状態となっている。そこで既設管路内に新設管を設定し、即ち地表を掘り起すことなく、既設老朽管を新しい管路の保護管として利用した管路更新工法が開発され、次第に一般化して、このような工法の採用された場合においては既存設備より小径の管路において、既存設備より大量の流体を移送することが必要となり、その流圧は隔段に高いものとならざるを得ないが、斯様にして高圧化した配管管路においては上記したような先行技術では即応し難い。つまり本発明者等による前記先願技術は頗る的確な好ましい技術として各方面に広く採用されているが、具体的に1つの封塞機構で対応し得る圧力条件は $1.3\text{kg}/\text{cm}^2$ 程度が限度であって、平滑な管体内面においてゴム質の如きシール材の膨出接合力を以てしては成程巧妙な閉塞シールであるとしても上記圧力条件を超えて閉塞シールすることは至難である。

勿論、上記のようなシール材および受板、押板を多段に設けることにより、その耐圧性を向上することについて本発明者等が実施検討しているが、このように多段化することは折角の前記先行技術の有する構成簡易、操作容易のような技術的メリットを大きく失うものであり、例えば前記C形シール材を彎曲膨出させるためのナットによる回動緊締操作のみを考察してもその緊締操作ストロークが倍増（仮りに2段として）し、又2つのC形シール材に対し同時に緊圧することとなるから操作トルクも倍増するから緊締操作は数倍に困難なものとなる。

「発明の構成」

（課題を解決するための手段）

1. 受板と押板との間に半径方向に屈曲膨出するように

されたリング状シール材を介装せしめて螺合軸材に軸装し、該螺合軸材に螺合されたナット部材により前記押板を受板に向けて押圧し上記リング状シール材を屈曲膨出させて管体内面に圧着シールさせるようにしたものにおいて、上述した螺合軸材に対しその周側に複数の係着板を伸縮性連結材で連結し略所定の間隔を採って配設するようにした係着手段を前記ナット部材により上記リング状シール材と共に係脱操作するように設けたことを特徴とする管体耐圧閉塞機構。

2. 受板が螺合軸材に固定され、押板と係着手段との間に介装受部材を設け、該介装受部材に係着手段における係着板の基端を支承せしめ、ワッシャ部材を介してナット部材の押圧緊締力を前記係着板に作用させるようにした前記1項に記載の管体耐圧閉塞機構。

3. 螺合軸材に頭部を形成し、該頭部に係着手段における係着板の基端側を支承せしめ、該係着板の遊端側に受板を接合すると共にリング状シール材および押板とナット部材を上記螺合軸材に軸装し、前記受板と押板との間におけるリング状シール材の内部にシール材と該シール材を圧縮して受板と螺合軸材との間隙をシールするためのスペーサーを介装した前記1項に記載の管体耐圧閉塞機構。

4. シール材を圧縮して受板と螺合軸材との間隙をシールするためのスペーサーと複数の係着板を連結し略所定の間隔を採って配設するための伸縮性連結材とが一体の弾性材で形成された前記3項に記載した管体耐圧閉塞機構。

5. 押板が管体内径より大径として形成され、該押板と管端との間にゴム質の如きによる防塵カバーを介装せしめ、前記押板から管体の外部に突出した螺合軸材に螺合したナット部材を締め込むことにより上記した防塵カバーが管端と押板との間に挟み込まれリング状シール材の屈曲膨出による管体内面接合シール以前に押板が管端に接合固定化することを防止すると共に管端より外部土砂などが内部に進入することを防止するようにしたことを特徴とする前記1項に記載の管体耐圧閉塞機構。

(作用)

ナット部材を締め込むと押板が受板に向けて押進されリング状シール材を外周方向に屈曲膨出させるが、又各係着板を伸縮性連結材の弾性（伸縮性）に抗して傘開き状に拡開せしめ、その遊端（外側端）を管体の内面に対して圧接する。このようなリング状シール材における屈曲膨出と各係着板の管体内面に対する圧接係止はその何れかが先行し（従って他方が後行する）あるいは同時進行であってもよい。然し一般的には係着板が管体内面に係着固定化し、次いでリング状シール材を膨出シールさせるようにする（但しこのリング状シール材の膨出シール作用時にも係着板の固定化が増強される）。リング状シール材の管体内面に対する圧接は該部分における流体（ガスまたは液体）の漏洩を阻止し、又傘開き状に拡開

した各係着板遊端の管体内面に対する圧接係止は閉塞機構全般の管体に対する設定位置を固定化する。

伸縮性連結材は複数の各係着片を螺合軸材ないし管体に対して夫々所定の間隔位置に保持し、しかもナット部材の弛緩時において各係着片を管体に対する圧接係止状態から解除する。

押板の径が管体内径より小さいときは管体内に進入して締め込まれるが、押板の径が管体内径より大きいときは係着板が先に管体に係止すると適切な締着閉塞が得難くなる傾向があり、このような場合に管端と押板との間にゴム質の如きによる防塵カバーを挟入することによって押板と管端間に締込み代（リング状シール材が完全に圧接締着されるだけのスペース）を保持し、締込みによって防塵の完全を図らしめる。

係着板と受板との間の螺合軸材周側にシール材を介装し、適切にスペーサなどをも用いることにより受板が螺合軸材に対しスライドする場合においても該螺合軸材との間の隙間を閉塞シールする。

係着板の係止状態で閉塞機構に管体内圧が作用すると各係着板による管体への係止力は更に増加される。

(実施例)

上記したような本発明によるものの第1の構成関係は第1図と第2、3図において示す如くであって、ボルトまたは螺筒のような螺合軸材1に対し定置される受板2と該螺合軸材1に対し軸方向において移動可能な押板3との間に半径方向に屈曲膨出するようにされたリング状シール材4を介装せしめ、上記押板3を前記螺合軸材1に螺合したナット部材5により受板2方向に押圧しリング状シール材4を屈曲膨出させてシールさせること自体は上述した本発明者等による先行技術と同じであり、このため前記した受板2および押板3の前記リング状シール材4に対する接合面に対向した傾斜面部2a、3aの如きが形成されている。本発明においては上記のような構成のものにおいて、前記した押板3とナット部材5との間に介装受部材6と複数の係着板7を配設したもので、前記した係着板7の外周部分には第2、3図に示すように各係着板7を所定位置に保持し、しかもナット部材5による緊圧で拡開作用を行わせるためのゴム質のような伸縮性連結材8が取付けられ、又この場合には第1図に示すように受板2が上記した螺合軸材1の先端部に溶接部12の如きで固定されていて、ナット部材5と各係着板7との間にはワッシャ部材9が介装されている。

第4図には本発明によるもう1つの構成関係が示されており、即ち第1～3図に示したものにおいては管体内の任意の個所において設定し得るようにしたものであるのに対し、この第4図のものにおいては特に管端に対して設定するようにしたものであって、頭部11を有する螺合軸材1に対して第1～3図に示したものと同様に伸縮性連結材8で外周部分を所定位置に保持するように連結された複数の係着板7が上記頭部11で内周側端部を受

けられており、このような係着板7に対して受板2、リング状シール材4および押板3が順次に配設され、押板3には管体10の端部に覆着する被覆部3bが一体に形成されていて、管体10の外部に突出した螺合軸材1に対してナット部材5が螺合されている。又この場合には頭部11で受けられている前記係着板7および受板2部分は管内流体が進入するものであることからしてリング状シール材4の内部に押板3の押進力を受け、受板2の螺合軸材1側に装着されたOリングのようなシール材14と該シール材14を圧縮シールするスペーサー13が設けられており、即ち押板3のナット部材5による押進でリング状シール材4を彎曲シールさせると共にこのシール材14をも圧縮して螺合軸材1と受板2との間隙をシールするように成っている。更に第5図には上記のようなスペーサー13を用いない本発明のもう1つの構成関係が示されている。即ち頭部11を有する螺合軸材1に対して係着板7、受板2、リング状シール材4および押板3を挿着し、該螺合軸材1に係合されたナット部材5で緊締シールするように成っていることは前述した第4図のものと同様であるが、この第5図の場合においては上記係着板7の夫々の配設位置を保持するための伸縮性連結材8と前記シール材14とを一体に形成し、特にシール材14部分については第4図のものにおけるスペーサー13部分をもゴム質の如きで一体として形成したもので、更に押板3の内側には同じくゴム質の如きによる防塵スペーサー15を設け、ナット部材5による緊締に当って管体10の端部との間をシールし土層内埋設によっても内部機構部分に土砂などが進入しないように成っている。

なお前記係着板7については一般的な形態である方形板が採用された場合においてナット部材5による緊締時に管体10の内面に対して第6図に示すように両側角部7aで接合することは明かであり、従って材質的に硬度の高いものが好ましく、例えば焼入鋼を採用した場合においては一般的な鋼管である管体10の内面に喰い込んで係止的確な係着が得られる。又上記のように係着板7が両側角部7aで係着する構成のものにおいては係着板7の数如何が具体的な係着力に影響することは明かであって、特に適用すべき管体10が大径の場合においてはこのような事由から係着板7の配設数を多くすることが管内高压条件に耐えるために枢要である。即ちこのような大径管体に対して前記第5図のものを採用するには第7図に示すように螺合軸材1の頭部11に対して別に受盤部材21を取付け、該受盤部材21の周側に形成された段状受部21aにおいて係着板7の基端を支承せしめるもので、このようにすると頭部11より大径化した段状受部21aにおいて相当多数の係着板7を配設支承することが可能となる。又このようにして大径管となった場合においては第5図に示したものにおける第4図のスペーサー13、シール材14に相当した部分は別体のシール材24を採用する。

伸縮性連結材8に対する各係着板7の取付け状態につ

いては第8図にその断面構造が示されており、同図

(a)のように各係着板7が伸縮性連結材8の面内に埋設されたもの、あるいは同図(b)のように各係着板7が伸縮性連結材8の面上に取付けられるものの如きの何れでもよく、鋼片の如きである各係着板7はゴム質である伸縮性連結材8に対して焼付けの如きで安定に止着される。

本発明によるものの具体的な設計製作例として、外径5mmで内径が4mmの鋼管10端部に適用すべき耐圧閉塞機構として、螺合軸材1としては外径15mmでその軸心に径6mmの通孔の形成されたものを採用し、即ちこの通孔を介して管体ガス流体を外部に取出し、その圧力ないし組成を試験測定するようにしたもので、受板2、押板3としては厚さが3mmの鋼板を図示のように成形したものを用い、リング状シール材4は中間部分(最も薄肉化した部分)の厚さが6mmで硬度JIS HS 50のゴム材を採用し、これらに対する係着板6としては幅が8mmで長さが19mmであり厚さ3.2mmの軟鋼鋼板を第6図のように6枚等間隔に位置するようにゴム質の伸縮性連結材8に焼きつけ接着したものを第5図のように組付けたものを採用して蝶ナットであるナット部材5により前記鋼管10の内面を水により湿潤させた条件下で充分緊締した。即ちこのようにして螺合軸材1のナット部材5より延出した部分に管体を接続し、前記鋼管10内を昇圧した結果は11.2kg/cm²に達するまでは閉塞機構が全く移動することがなく、従って又リング状シール材4によるガスシールも完全であって全く漏洩のないものであることが確認され、斯うした結果は第1～3図、第4図のものにおいても同様に得ることができた。

これに対し上記と同じ鋼管10に対し、前記した係着板7および伸縮性連結材8を用いないで、受板2と押板3の間にリング状シール材4を介装したものについて同様に緊締締着し、鋼管10内を昇圧させた場合においては鋼管10の内面が絶乾状態であると2.3kg/cm²を超えることによって閉塞機構が押し出され、従って漏れを生ずることとなるのに対し、鋼管10の内面を水で湿潤させた条件下の場合には1.3kg/cm²でスライドし漏洩を発生するものであった。

即ち本発明によるものは係着板を採用することにより閉塞機構のスライドし易い湿潤条件下において8～9倍も閉塞性能を向上し得るものであることが確認され、勿論これを複数段に採用することも可能で、それによって耐圧性能を比例的に高め得られる。何れにしてもコンパクトな構成により安定且つ高度の耐圧閉塞を実現し得ることを知った。

「発明の効果」

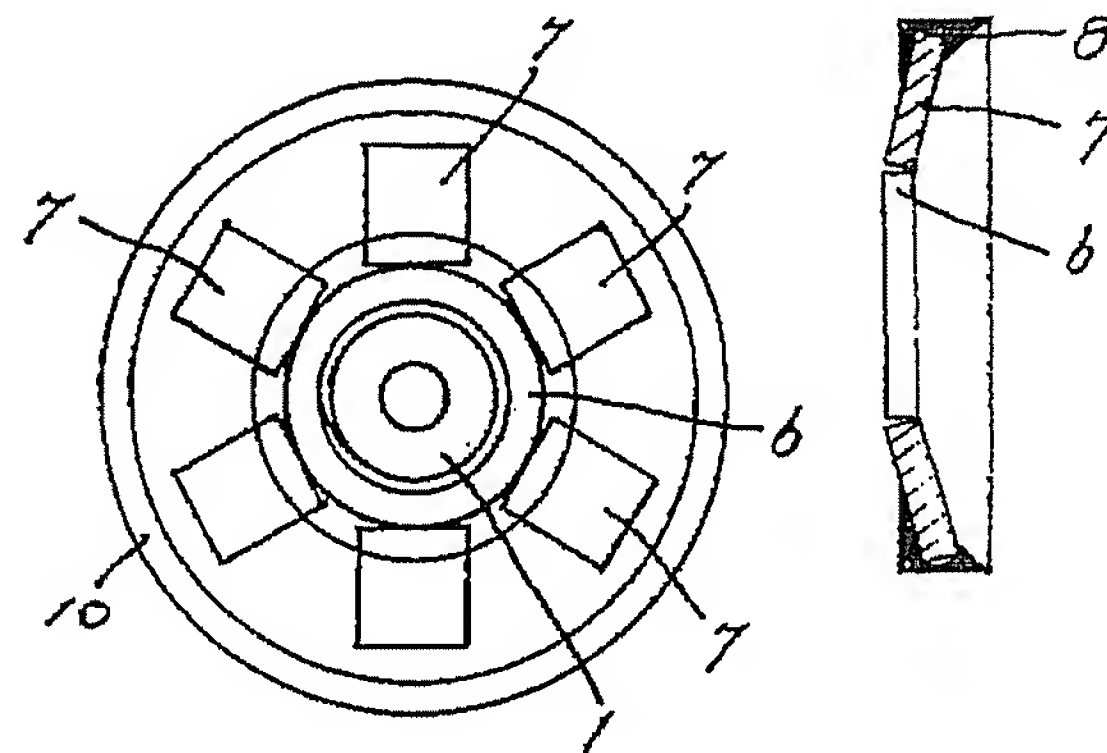
以上説明したような本発明によるときは、管体の中間部ないし端部の如き、特別なバルブなどの採用されない条件下において、しかも相当に高い管内流体圧によっても十分に安定な閉塞シールを確保し得るもので、その構

第6図はその係着板の配設関係を示した正面図、第7図は前記第5図の形式によるものを比較的大径の管体に適用する場合の係着板部分に関する断面図、第8図は伸縮性連結材に対する係着片の取付状態の若干を示した断面図である。

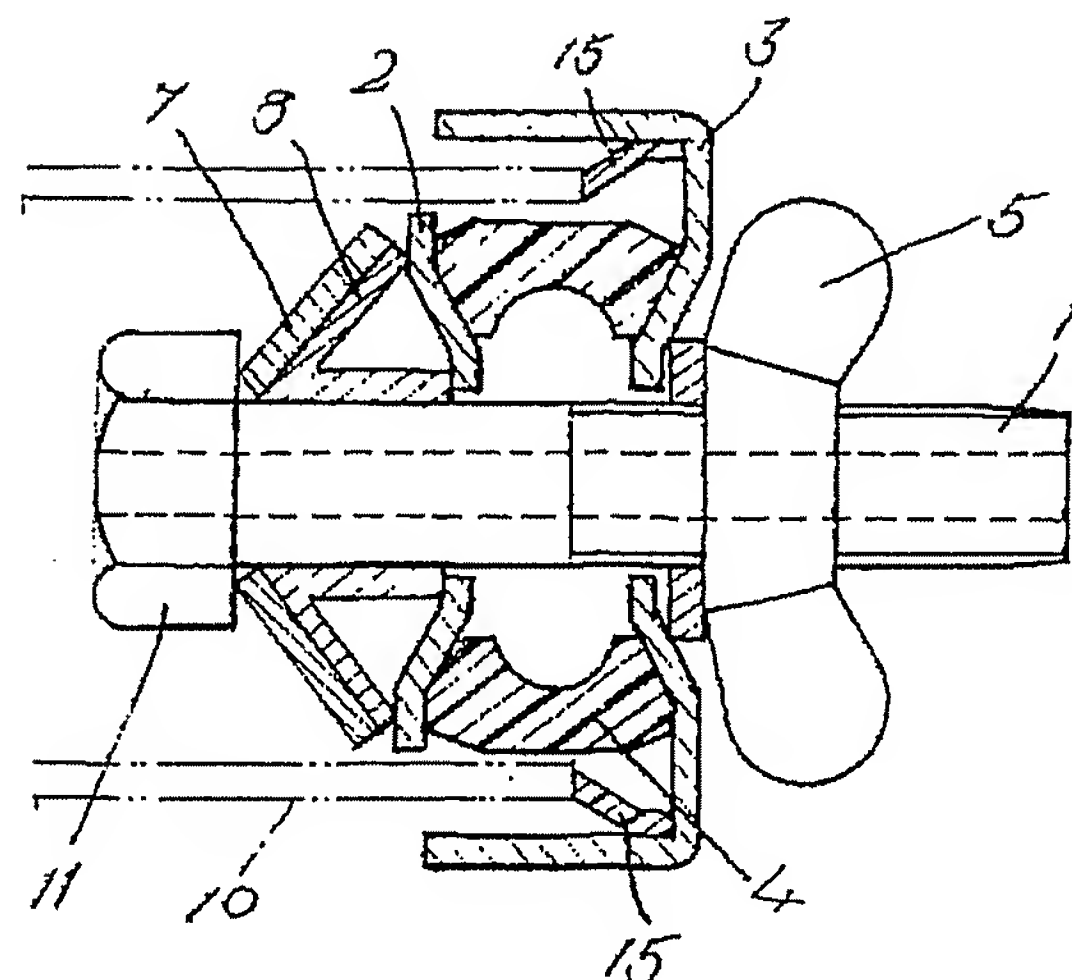
然してこれらの図面において、1は螺合軸材、2は受板、3は押板、4はリング状シール材、5はナット部材、6は介装受部材、7は係着板、8は伸縮性連結材、9はワッシャ部材、10は管体、11は螺合軸材の頭部、13はスペーサー、14はシール材、21は受盤部材、21aはその段状受部、24はシール材を示すものである。

はスペーサー、14はシール材、21は受盤部材、21aはその段状受部、24はシール材を示すものである。

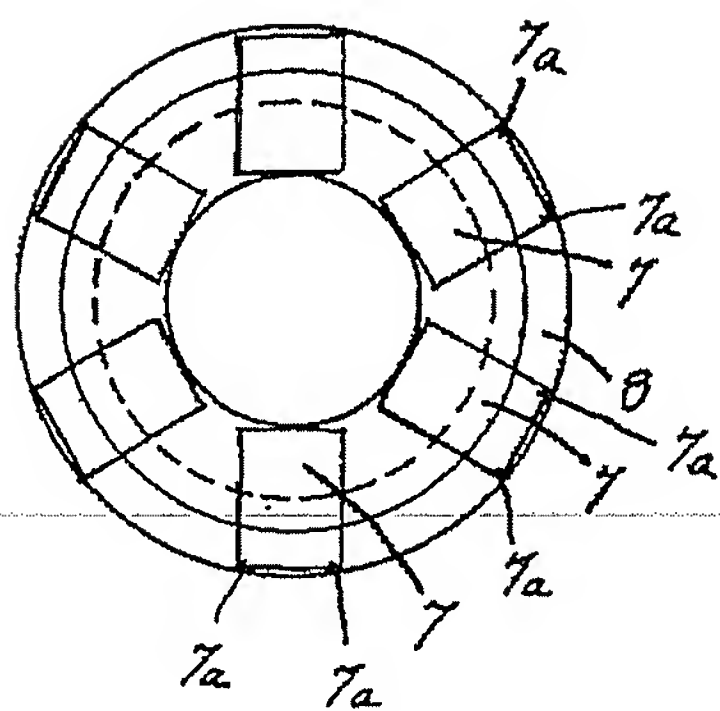
【第3図】



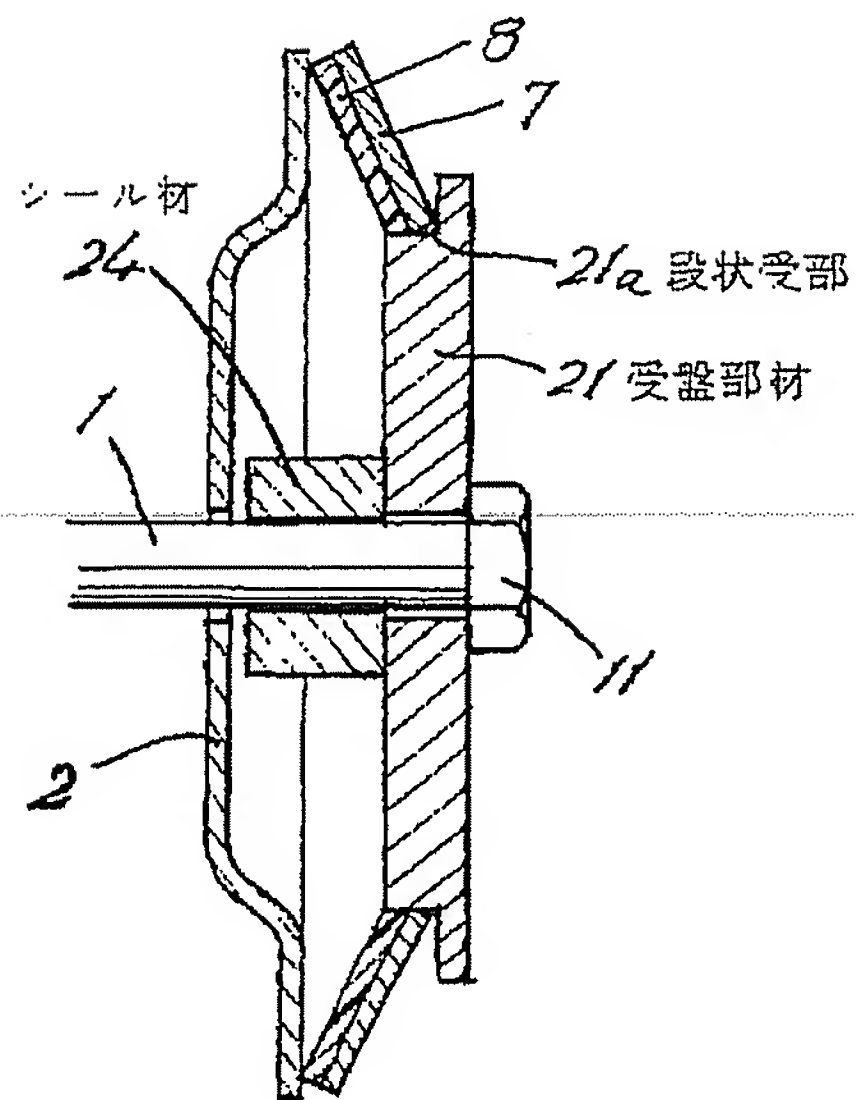
【第5図】



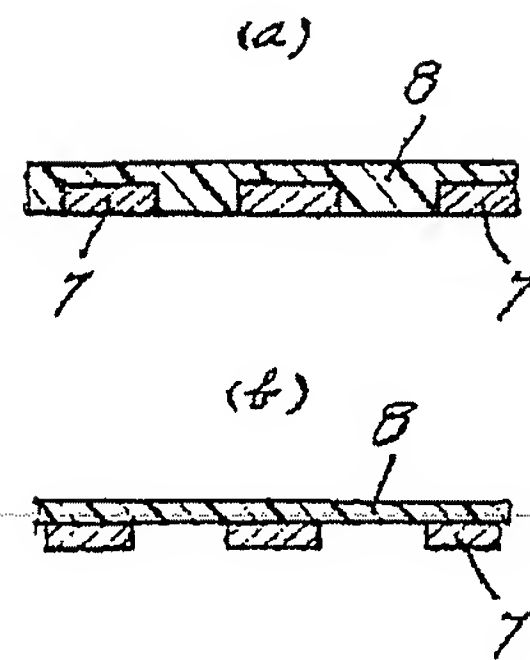
【第6図】



【第7図】



【第8図】



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CLAIMS

(57) [Claim(s)]

[Claim 1] Make a ring shape sealant which crookedness bulge was made to be carried out radially infix between a supporting plate and a hand plate, and it shafts to a screwing shaft material, In what turns said hand plate to a supporting plate by a nut member screwed in this screwing shaft material, presses, is made to carry out crookedness bulge of the above-mentioned ring shape sealant, and was made to carry out a sticking-by-pressure seal to a shell inner surface, A shell resisting pressure blocking mechanism providing so that engaging-and-releasing operation of the attaching means which connects two or more engagement boards with a screwing shaft material mentioned above by an elastic accouplement at the circumference side of opposite *Perilla frutescens* (L.) Britton var. *crispa* (Thunb.) Decne., takes an approximately predetermined interval, and was allocated may be carried out with the above-mentioned ring shape sealant by said nut member.

[Claim 2] The shell resisting pressure blocking mechanism according to claim 1 a supporting plate is fixed to a screwing shaft material, provides an infixation carrier member between a hand plate and an attaching means, and makes this infixation carrier member support movably a end face of an engagement board in an attaching means, and it was made to make press binding power of a nut member act on said engagement board via a washer member.

[Claim 3] Form a head in a screwing shaft material and this head is made to support movably the end face side of an engagement board in an attaching means, Join a supporting plate to the free end side of this engagement board, and a ring shape sealant, and a hand plate and a nut member are shafted to the above-mentioned screwing shaft material, The shell resisting pressure blocking mechanism according to claim 1 which infixed a spacer for compressing a sealant and this sealant into an inside of a ring shape sealant between said supporting plate and a hand plate, and carrying out the seal of the gap of a supporting plate and a screwing shaft material.

[Claim 4]A shell resisting pressure blocking mechanism which an elastic accouplement for connecting a spacer for compressing a sealant and carrying out the seal of the gap of a supporting plate and a screwing shaft material and two or more engagement boards, and taking and allocating an approximately predetermined interval indicated to claim 3 formed with an elastic material of one.

[Claim 5]a hand plate being formed as a major diameter, making protection-against-dust covering like gum boiled and twisted infix between this hand plate and an edge of a winding instrument, and from a shell inside diameter, By fastening a nut member screwed in a screwing shaft material projected from said hand plate to the exterior of a shell. The above-mentioned protection-against-dust covering is put between an edge of a winding instrument and a hand plate, and a hand plate prevents carrying out junction immobilization to an edge of a winding instrument before a shell inner surface joint seal by crookedness bulge of a ring shape sealant, and. The shell resisting pressure blocking mechanism according to claim 1 preventing external earth and sand etc. from advancing into an inside from a shell.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

"The purpose of an invention"

this invention relates to a shell resisting pressure blocking mechanism -- at least -- several -- more than kg/cm^2 -- general -- 10 kg/cm^2 -- it is going to provide the shell resisting pressure blocking mechanism which can make the blockade seal stable also on the above high pressure conditions.

(Field of the Invention)

The mechanism used the purpose so that an exact blockade seal may be made under the high voltage conditions of the gas in a pipe, or a fluid in tube ends or pars intermedia of various piping, etc., the fluid in a pipe may be suitably taken out under shell blockade seal conditions and also it may examine and measure.

(PRIOR ART)

It has just been going to be performed to use piping, when conveying, where it supplied thru/or discharged gas, other gases, and other fluids or a powdery and granular material and others are added in these fluid for many years, The life thru/or work environment in today is what the piping pipeline which ****(ed) converged. Therefore, it must also blockade that the necessity of stopping thru/or restricting a flow of that internal fluid in such a piping pipeline consists under the condition in which such apparatus does not consist in many cases, although the apparatus which incorporated into pipelines, such as a valve, by whether it is ** for this reason, and has been arranged is adopted. Namely, as for piping used for the above supplies, discharge, etc., it is common to cover a considerable long distance, Since immense apparatus is needed for installing a valve etc. everywhere also in such long-distance and huge equipment and special fluid pressure is fallen greatly, usually it is provided only in the ***** point. And it is requested that test measurement should be constructed and carried out in a proper position in such huge equipment, and, in such a case, it is necessary to blockade in the arbitrary positions

of such a pipeline.

Although it is making stuffing generally as a blocking means of the pipeline by such [conventionally] a valve etc., there are many man days and, moreover, the blockade by stuffing, such as this wooden plug, has them. [imperfect] Then, this invention persons have proposed publication of unexamined utility model application Showa 56-80974 and art, such as JP,62-206498,A, that the disadvantage of such a thing of the general former should be canceled. Infix the ring shape sealant of section C type between a supporting plate and a hand plate, and this ring shape sealant Namely, this sealant and said supporting plate, It binds with the rotation of a nut to the bolt (or helicocone) fitted in the central part of a hand plate, U form is made to carry out curvature bulge of the ring shape sealant, and the seal of the inside of a pipe is carried out, and according to this art, it can apply to here and there [of a shell], and can blockade, and, moreover, that operation can perform an exact seal blockade by a plain operating physical force with said nut.

(Object of the Invention)

However, in the above conventional things, it is smooth in the inner surface of the shell applied, and the fluid pressure in fluids supplied using the shell which moreover ****(ed) in recently, such as gas and water, is becoming high gradually. That is, when hydrostatic pressure becomes high, it is in ** that it becomes possible to make supply of an efficient fluid and discharge, and, on the other hand, it is being requested in said fluid exceeding the design range [in / in high density of the residence in today etc. thru/or expansion-izing of an inhabitable area / an existing facility] that supply discharge should be carried out. Especially an existing facility is superannuated by many years past, and will be in the state where the piping itself should be updated, Such construction itself is a carpenter remarkably the place which should unearth and update such superannuation piping, And if the transportation facility and the structure are set up and a such existing piping pipeline top does not destroy such whole equipment, it is general that it is change which cannot be expected in the time of installation which cannot carry out this construction, and it is in the state where repair updating work cannot be carried out as a matter of fact. Then, without setting up a new construction pipe in an existing pipeline, namely, digging up surface of the earth, On the case where the renewal construction method of a pipeline used as a protective tube of a new pipeline was developed, were generalizing the established obsolete pipe gradually, and such a construction method is adopted, and in the pipeline of a byway from an existing facility, Although it cannot but be necessary to transport a lot of fluids than an existing facility and the fluid pressure cannot but become high at ****, in advanced technology which was described above in the piping pipeline which was made into Mr. ** and was high-voltage-ized, it is hard to conform. That is, although said prior art by this invention person etc. is widely adopted in every direction as very exact desirable art, A $1.3\text{kg}/\text{cm}^2$ grade is a limit, and the pressure conditions of

carrying out a blockade seal exceeding the above-mentioned pressure conditions which can respond by one **** mechanism concretely are the most difficult though it is a skillful blockade seal as Shigeru, if it carries out by the bulge junction power of the sealant like gum in a smooth shell inner surface.

Of course, although this invention person etc. are doing operation examination of the resistance to pressure about improving by providing above sealants and supporting plates, and a hand plate in multistage, Thus, the composition simple which said advanced technology with special multistage-izing has, operation -- a technical merit which is easy is lost greatly, and even if it considers only the rotation binding operation with the nut for carrying out curvature bulge of said C form sealant for example, the binding operating stroke as two steps temporary. [double and] Since ** pressure will be simultaneously carried out to two C form sealants and manipulation torque is also doubled, binding operation will become difficult several times.

"Composition of an invention"

(The means for solving a technical problem)

1. Make the ring shape sealant which crookedness bulge was made to be carried out radially infix between a supporting plate and a hand plate, and it shafts to a screwing shaft material, In what turns said hand plate to a supporting plate by the nut member screwed in this screwing shaft material, presses, is made to carry out crookedness bulge of the above-mentioned ring shape sealant, and was made to carry out a sticking-by-pressure seal to a shell inner surface, The shell resisting pressure blocking mechanism providing so that engaging-and-releasing operation of the attaching means which connects two or more engagement boards with the screwing shaft material mentioned above by an elastic accouplement at the circumference side of opposite *Perilla frutescens* (L.) Britton var. *crispa* (Thunb.) Decne., takes an approximately predetermined interval, and was allocated may be carried out with the above-mentioned ring shape sealant by said nut member.
2. Shell resisting pressure blocking mechanism given in said 1st paragraph supporting plate is fixed to screwing shaft material, provides infixation carrier member between hand plate and attaching means, and makes this infixation carrier member support movably end face of engagement board in attaching means, and it was made to make press binding power of nut member act on said engagement board via washer member.
3. Form a head in a screwing shaft material and this head is made to support movably the end face side of the engagement board in an attaching means, Join a supporting plate to the free end side of this engagement board, and a ring shape sealant, and a hand plate and a nut member are shafted to the above-mentioned screwing shaft material, A shell resisting pressure blocking mechanism given in said 1st paragraph that infixes the spacer for compressing a sealant and this sealant into the inside of the ring shape sealant between said supporting plate and a hand plate, and carrying out the seal of the gap of a supporting plate and a screwing

shaft material.

4. Shell resisting pressure blocking mechanism which elastic accouplement for connecting spacer for compressing sealant and carrying out seal of gap of supporting plate and screwing shaft material and two or more engagement boards, and taking and allocating approximately predetermined interval indicated in said 3rd paragraph formed with elastic material of one.

5. a hand plate being formed as a major diameter, making protection-against-dust covering-like gum boiled and twisted infix between this hand plate and an edge of a winding instrument, and from a shell inside diameter, By fastening the nut member screwed in the screwing shaft material projected from said hand plate to the exterior of the shell. The above-mentioned protection-against-dust covering is put between an edge of a winding instrument and a hand plate, and a hand plate prevents carrying out junction immobilization to an edge of a winding instrument before the shell inner surface joint seal by crookedness bulge of a ring shape sealant, and. A shell resisting pressure blocking mechanism given in said 1st paragraph preventing external earth and sand etc. from advancing into an inside from an edge of a winding instrument.

(OPERATION)

When a nut member is fastened, a hand plate is pushed forward towards a supporting plate, and an outer peripheral direction is made to carry out crookedness bulge of the ring shape sealant, but resist the elasticity (elasticity) of an elastic accouplement, a **** engagement board is made to extend in the shape of an umbrella difference, and the free end (outer tip) is welded by pressure to the inner surface of a shell. The any they are may precede the pressure welding stop to the shell inner surface of crookedness bulge and each engagement board in such a ring shape sealant, or (therefore, another side carries out backward) it may be synchronization. However, an engagement board carries out engagement immobilization and, generally, subsequently, is made to carry out the bulge seal of the ring shape sealant to a shell inner surface (however, immobilization of an engagement board is reinforced also at the time of the bulge sealing action of this ring shape sealant). the pressure welding stop to the shell inner surface of each engagement board free end which the pressure welding to the shell inner surface of a ring shape sealant prevented disclosure of the fluid (gas or fluid) in this portion, and was extended in the shape of a **** difference -- a blocking mechanism -- the setting-out position over a whole shell is fixed.

An elastic accouplement holds two or more pieces of engagement of each in a predetermined interval position to a screwing shaft material thru/or a shell, respectively, and, moreover, cancels each piece of engagement of the pressure welding locked state over a shell in the time of relaxation of a nut member.

When the path of a hand plate is smaller than a shell inside diameter, advance into a shell, and are fastened, but. There is a tendency for a suitable secure-closing blockade to become

difficult to get if an engagement board stops to a shell previously when the path of a hand plate is larger than a shell inside diameter, in such a case, bundle lump cost (only space where pressure welding secure closing of the ring shape sealant is carried out thoroughly) is held between a hand plate and an edge of a winding instrument, and dustproof completeness is made to plan by bundle lump by putting protection-against-dust covering like gum boiled and twisted between an edge of a winding instrument and a hand plate

A sealant is infixed in the screwing shaft material circumference side between an engagement board and a supporting plate, and when a supporting plate slides to a screwing shaft material by using a spacer etc. appropriately, the blockade seal of the crevice between these screwing shaft materials is carried out.

If shell internal pressure acts on a blocking mechanism by the locked state of an engagement board, it will be further increased by the stop power to a shell with each engagement board.

(EXAMPLE)

As [show / although based on this invention which was described above / the 1st composition relation / in Drawing 1 and Drawing 2nd / the / and 3], The ring shape sealant 4 which crookedness bulge was made to be carried out between the movable hand plates 3 radially in shaft orientations to the supporting plate 2 and this screwing shaft material 1 which are fixed to a bolt or the screwing shaft material 1 like **** is made to infix, It is the same as the advanced technology by this invention person etc. who mentioned above to press to a supporting plate 2-way by the nut member 5 which screwed the above-mentioned hand plate 3 in said screwing shaft material 1, to carry out crookedness bulge of the ring shape sealant 4, and to carry out a seal itself, For this reason, **** of the slope sections 2a and 3a which countered the plane of composition over said ring shape sealant 4 of the above mentioned supporting plate 2 and the hand plate 3 is formed. It is what allocated the infixation carrier member 6 and two or more engagement boards 7 between the hand plate 3 and the nut member 5 which were described above in the thing of the above composition in this invention, As shown in Drawing 2nd [the] and 3 at the peripheral part of the above mentioned engagement board 7, each engagement board 7 is held to a prescribed position, And the elastic accouplement 8 like the gum for making an extension operation perform with the ** pressure by the nut member 5 is attached, the tip part of the screwing shaft material 1 which the supporting plate 2 described above as shown in Drawing 1 in this case -- the weld zone 12 -- like -- it comes out, and it is being fixed and the washer member 9 is infixed between the nut member 5 and each engagement board 7.

As opposed to enabling it to set up in the arbitrary parts in a shell in what another composition relation by this invention is shown in Drawing 4, namely, was shown in Drawing 1-3, It is made to set up especially to an edge of a winding instrument in the thing of this Drawing 4, Two or more engagement boards 7 connected so that a peripheral part might be held to a prescribed

position by the elastic accouplement 8 like what was shown in Drawing 1-3 to the screwing shaft material 1 which has the head 11 have received the inner circumference side edge part in the above-mentioned head 11, The supporting plate 2, the ring shape sealant 4, and the hand plate 3 are allocated one by one to such an engagement board 7, the covering section 3b which carries out ** arrival to the hand plate 3 at the end of the shell 10 is formed in one, and the nut member 5 is screwed to the screwing shaft material 1 projected to the exterior of the shell 10. said engagement board 7 and supporting plate which have received in the head 11 in this case -- two portion the forward power of the hand plate 3 inside the ring shape sealant 4, considering being that into which the fluid in a pipe advances, [receive and] The spacer 13 which carries out the compression seal of the sealant 14 like the O ring with which the screwing shaft material 1 side of the supporting plate 2 was equipped, and this sealant 14 is formed, That is, the curvature seal of the ring shape sealant 4 is carried out by pushing forward by the nut member 5 of the hand plate 3, and it changes so that this sealant 14 may also be compressed and the seal of the gap of the screwing axostyle 1 and the supporting plate 2 may be carried out. Furthermore, another composition relation of this invention which does not use the above spacers 13 is shown in Drawing 5. Namely, although it is the same as that of the thing of Drawing 4 mentioned above to change so that a binding seal may be carried out by the nut member 5 which inserted the engagement board 7, the supporting plate 2, the ring shape sealant 4, and the hand plate 3 to the screwing axostyle 1 which has the head 11, and engaged with this screwing shaft material 1, The elastic accouplement 8 and said sealant 14 for holding each arranging position of the above-mentioned engagement board 7 in the case of this Drawing 5 are formed in one, it being the thing like gum out of which it came and which was formed as one, and spacer 13 portion in the thing of Drawing 4 especially about sealant 14 portion, as well as the inside of the hand plate 3, the protection-against-dust spacer 15 like gum boiled and depended is formed, and it changes so that the seal of between the ends of the shell 10 may be carried out in binding by the nut member 5 and earth and sand etc. may not advance into an inner structure portion by burial in a soil layer, either.

It is in ** to join by the both-sides corner 7a, as said engagement board 7 is shown in Drawing 6 to the inner surface of the shell 10 in the case where the rectangular sheet which is a general gestalt is adopted, at the time of binding by the nut member 5, Therefore, what has hardness high in construction material is preferred, for example, when hardening steel is adopted, inside, it eats to the inner surface of the shell 10 which is a common steel pipe, and stops, and exact engagement is obtained. moreover -- in the thing of composition of that the engagement board 7 is engaged by the both-sides corner 7a as mentioned above -- the number of the engagement boards 7 -- it being in ** that how influences concrete engaging force, and, It is chief in order that increasing the number of allocation of the engagement board 7 from such a reason may bear the high voltage conditions in a pipe, when the shell 10 which should be

applied especially is a major diameter. Namely, as it is shown in Drawing 7 to such a major-diameter shell for adopting the thing of said Drawing 5, the receiving board member 21 is independently attached to the head 11 of the screwing shaft material 1, If the end face of the engagement board 7 is made to support movably in the stage-like receiving part 21a formed in the circumference side of this receiving board member 21 and it does in this way, it will become possible to carry out allocation bearing of the engagement board 7 of considerable a large number in the major-diameter-ized stage-like receiving part 21a from the head 11. When it does in this way and becomes a major-diameter pipe, considerable in the bottom, a portion adopts the sealant 24 of a different body as the spacer 13 of Drawing 4 in what was shown in Drawing 5, and the sealant 14.

About the fitting state of each engagement board 7 to the elastic accouplement 8, the section structure is shown in Drawing 8, That by which each engagement board 7 was laid underground in the field of the elastic accouplement 8 as shown in the figure (a), or -- any of **** of that by which each engagement board 7 is attached on the field of the elastic accouplement 8 as shown in the figure (b) being sufficient, and receiving the elastic accouplement 8 like slab in which it comes out and each of a certain engagement board 7 is gum -- baking -- like -- it comes out and is attached firmly stably.

As a resisting pressure blocking mechanism which should be applied to steel pipe 10 end 4 mm in inside diameter with the outer diameter of 5 mm as a concrete example of design manufacture although based on this invention, It is what adopts that by which the through-hole with a diameter of 6 mm was formed in that axial center with the outer diameter of 15 mm as the screwing shaft material 1, namely, takes out a shell gas stream object outside via this through-hole, and was made to carry out test measurement of that pressure thru/or presentation, As the supporting plate 2 and the hand plate 3, what fabricated the 3-mm-thick steel plate like a graphic display is used, As for the ring shape sealant 4, the thickness of an omitted portion (portion which carried out thinning most) adopts the rubber material of hardness JIS HS 50 at 6 mm, As the engagement board 6 to these, length is 19 mm in 8 mm, and width a 3.2-mm-thick soft steel steel plate as shown in Drawing 6. What attached what was printed and pasted up on the elastic accouplement 8 of gum so that it might be located in six-sheet regular intervals as shown in Drawing 5 was adopted, and it bound with the bottom of the conditions to which humidity of the inner surface of said steel pipe 10 was carried out with water enough by the nut member 5 which is a wing nut. Namely, a shell is connected to the portion which did in this way and extended from the nut member 5 of the screwing shaft material 1, A blocking mechanism does not move at all the result of having carried out pressure up of the inside of said steel pipe 10 until it reaches 11.2 kg/cm^2 , Therefore, it was checked that it is what whose gas seal by the ring shape sealant 4 is also perfect again, and does not have disclosure, and the result of having ****(ed) was able to be similarly obtained in

the thing of Drawing 1-3 and Drawing 4.

On the other hand, without using the above mentioned engagement board 7 and the elastic accouplement 8 to the same steel pipe 10 as the above, Binding secure closing is similarly carried out about what infixed the ring shape sealant 4 between the supporting plate 2 and the hand plate 3, A blocking mechanism is extruded, when pressure up of the inside of the steel pipe 10 is carried out and the inner surface of the steel pipe 10 exceeds 2.3 kg/cm^2 as it is an absolute dry condition, Therefore, in under the conditions to which humidity of the inner surface of the steel pipe 10 was carried out with water, it slides by 1.3 kg/cm^2 to leakage being produced, and disclosure is generated.

That is, by adopting an engagement board, it is checked that it is what may improve blockade performance also eight to 9 times under the humid condition which a blocking mechanism tends to slide, what is depended on this invention is possible also for, of course adopting this as two or more steps, and it can improve resisting pressure performance-like proportionally. Anyway, it knew that a stable and advanced resisting pressure blockade could be realized by compact composition.

"EFFECT OF THE INVENTION"

When based on this invention which was explained above, it is a thing like the pars intermedia of a shell thru/or an end which can moreover secure a blockade seal stable enough also by the fairly high hydrostatic pressure in a pipe under conditions which are not adopted, such as a special valve, Although the composition is also comparatively simple and handling is also under the above high voltage conditions, it has both effects, like it is very easy and is.

It is possible to use for construction thru/or test measurement, etc. about the various piping line high-voltage-ized also in recently widely, and it is the large invention of the effect industrially.

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TECHNICAL FIELD

(Field of the Invention)

The mechanism used the purpose so that an exact blockade seal may be made under the high voltage conditions of the gas in a pipe, or a fluid in tube ends or pars intermedia of various piping, etc., the fluid in a pipe may be suitably taken out under shell blockade seal conditions and also it may examine and measure.

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PRIOR ART

(PRIOR ART)

It has just been going to be performed to use piping, when conveying, where it supplied thru/or discharged gas, other gases, and other fluids or a powdery and granular material and others are added in these fluid for many years, The life thru/or work environment in today is what the piping pipeline which ****(ed) converged. Therefore, it must also blockade that the necessity of stopping thru/or restricting a flow of that internal fluid in such a piping pipeline consists under the condition in which such apparatus does not consist in many cases, although the apparatus which incorporated into pipelines, such as a valve, by whether it is ** for this reason, and has been arranged is adopted. Namely, as for piping used for the above supplies, discharge, etc., it is common to cover a considerable long distance, Since immense apparatus is needed for installing a valve etc. everywhere also in such long-distance and huge equipment and special fluid pressure is fallen greatly, usually it is provided only in the ***** point. And it is requested that test measurement should be constructed and carried out in a proper position in such huge equipment, and, in such a case, it is necessary to blockade in the arbitrary positions of such a pipeline.

Although it is making stuffing generally as a blocking means of the pipeline by such [conventionally] a valve etc., there are many man days and, moreover, the blockade by stuffing, such as this wooden plug, has them. [imperfect] Then, this invention persons have proposed publication of unexamined utility model application Showa 56-80974 and art, such as JP,62-206498,A, that the disadvantage of such a thing of the general former should be canceled. Infix the ring shape sealant of section C type between a supporting plate and a hand plate, and this ring shape sealant Namely, this sealant and said supporting plate, It binds with the rotation of a nut to the bolt (or helicocone) fitted in the central part of a hand plate, U form is made to carry out curvature bulge of the ring shape sealant, and the seal of the inside of a pipe is carried out, and according to this art, it can apply to here and there [of a shell], and

can blockade, and, moreover, that operation can perform an exact seal blockade by a plain operating physical force with said nut.

[Translation done.]

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EFFECT OF THE INVENTION

"EFFECT OF THE INVENTION"

When based on this invention which was explained above, it is a thing like the pars intermedia of a shell thru/or an end which can moreover secure a blockade seal stable enough also by the fairly high hydrostatic pressure in a pipe under conditions which are not adopted, such as a special valve, Although the composition is also comparatively simple and handling is also under the above high voltage conditions, it has both effects, like it is very easy and is. It is possible to use for construction thru/or test measurement, etc. about the various piping line high-voltage-ized also in recently widely, and it is the large invention of the effect industrially.

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TECHNICAL PROBLEM

(Object of the Invention)

However, in the above conventional things, it is smooth in an inner surface of the shell applied, and fluid pressure in fluids supplied using a shell which moreover ****(ed) in recently, such as gas and water, is becoming high gradually. That is, when hydrostatic pressure becomes high, it is in ** that it becomes possible to make supply of an efficient fluid and discharge, and, on the other hand, it is being requested in said fluid exceeding a design range [in / in high density of a residence in today etc. thru/or expansion-izing of an inhabitable area / an existing facility] that supply discharge should be carried out. Especially an existing facility is superannuated by many years past, and will be in the state where the piping itself should be updated, Such construction itself is a carpenter remarkably a place which should unearth and update such superannuation piping, And if a transportation facility and a structure are set up and a such existing piping pipeline top does not destroy such whole equipment, it is general that it is change which cannot be expected in the time of installation which cannot carry out this construction, and it is in the state where repair updating work cannot be carried out as a matter of fact. Then, without setting up a new construction pipe in an existing pipeline, namely, digging up surface of the earth, On a case where a renewal construction method of a pipeline used as a protective tube of a new pipeline was developed, were generalizing an established obsolete pipe gradually, and such a construction method is adopted, and in a pipeline of a byway from an existing facility, Although it cannot but be necessary to transport a lot of fluids than an existing facility and the fluid pressure cannot but become high at ****, in advanced technology which was described above in a piping pipeline which was made into Mr. ** and was high-voltage-ized, it is hard to conform. That is, although said prior art by this invention person etc. is widely adopted in every direction as very exact desirable art, A $1.3\text{kg}/\text{cm}^2$ grade is a limit, and pressure conditions of carrying out a blockade seal exceeding the above-mentioned pressure conditions which can respond by one **** mechanism concretely are the

most difficult though it is a skillful blockade seal as Shigeru, if it carries out by bulge junction power of a sealant like gum in a smooth shell inner surface.

Of course, although this invention person etc. are doing operation examination of the resistance to pressure about improving by providing above sealants and supporting plates, and a hand plate in multistage, Thus, the composition simple which said advanced technology with special multistage-izing has, operation -- a technical merit which is easy is lost greatly, and even if it considers only rotation binding operation with a nut for carrying out curvature bulge of said C form sealant for example, the binding operating stroke as two steps temporary. [double and] Since ** pressure will be simultaneously carried out to two C form sealants and manipulation torque is also doubled, binding operation will become difficult several times.
"Composition of an invention"

[Translation done.]

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MEANS

(The means for solving a technical problem)

1. Make a ring shape sealant which crookedness bulge was made to be carried out radially infix between a supporting plate and a hand plate, and it shafts to a screwing shaft material, In what turns said hand plate to a supporting plate by a nut member screwed in this screwing shaft material, presses, is made to carry out crookedness bulge of the above-mentioned ring shape sealant, and was made to carry out a sticking-by-pressure seal to a shell inner surface, A shell resisting pressure blocking mechanism providing so that engaging-and-releasing operation of the attaching means which connects two or more engagement boards with a screwing shaft material mentioned above by an elastic accouplement at the circumference side of opposite *Perilla frutescens* (L.) Britton var. *crispa* (Thunb.) Decne., takes an approximately predetermined interval, and was allocated may be carried out with the above-mentioned ring shape sealant by said nut member.
2. Shell resisting pressure blocking mechanism given in said 1st paragraph supporting plate is fixed to screwing shaft material, provides infixation carrier member between hand plate and attaching means, and makes this infixation carrier member support movably end face of engagement board in attaching means, and it was made to make press binding power of nut member act on said engagement board via washer member.
3. Form a head in a screwing shaft material and this head is made to support movably the end face side of the engagement board in an attaching means, Join a supporting plate to the free end side of this engagement board, and a ring shape sealant, and a hand plate and a nut member are shafted to the above-mentioned screwing shaft material, A shell resisting pressure blocking mechanism given in said 1st paragraph that infixed the spacer for compressing a sealant and this sealant into the inside of the ring shape sealant between said supporting plate and a hand plate, and carrying out the seal of the gap of a supporting plate and a screwing shaft material.

4. Shell resisting pressure blocking mechanism which elastic accouplement for connecting spacer for compressing sealant and carrying out seal of gap of supporting plate and screwing shaft material and two or more engagement boards, and taking and allocating approximately predetermined interval indicated in said 3rd paragraph formed with elastic material of one.
5. a hand plate being formed as a major diameter, making protection-against-dust covering like gum-boiled and twisted infix between this hand plate and an edge of a winding instrument, and from a shell inside diameter, By fastening the nut member screwed in the screwing shaft material projected from said hand plate to the exterior of the shell. The above-mentioned protection-against-dust covering is put between an edge of a winding instrument and a hand plate, and a hand plate prevents carrying out junction immobilization to an edge of a winding instrument before the shell inner surface joint seal by crookedness bulge of a ring shape sealant, and. A shell resisting pressure blocking mechanism given in said 1st paragraph preventing external earth and sand etc. from advancing into an inside from an edge of a winding instrument.

[Translation done.]

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OPERATION

(OPERATION)

When a nut member is fastened, a hand plate is pushed forward towards a supporting plate, and an outer peripheral direction is made to carry out crookedness bulge of the ring shape sealant, but resist the elasticity (elasticity) of an elastic accouplement, a **** engagement board is made to extend in the shape of an umbrella difference, and the free end (outer tip) is welded by pressure to the inner surface of a shell. The any they are may precede the pressure welding stop to the shell inner surface of crookedness bulge and each engagement board in such a ring shape sealant, or (therefore, another side carries out backward) it may be synchronization. However, an engagement board carries out engagement immobilization and, generally, subsequently, is made to carry out the bulge seal of the ring shape sealant to a shell inner surface (however, immobilization of an engagement board is reinforced also at the time of the bulge sealing action of this ring shape sealant). the pressure welding stop to the shell inner surface of each engagement board free end which the pressure welding to the shell inner surface of a ring shape sealant prevented disclosure of the fluid (gas or fluid) in this portion, and was extended in the shape of a **** difference -- a blocking mechanism -- the setting-out position over a whole shell is fixed.

An elastic accouplement holds two or more pieces of engagement of each in a predetermined interval position to a screwing shaft material thru/or a shell, respectively, and, moreover, cancels each piece of engagement of the pressure welding locked state over a shell in the time of relaxation of a nut member.

When the path of a hand plate is smaller than a shell inside diameter, advance into a shell, and are fastened, but. There is a tendency for a suitable secure-closing blockade to become difficult to get if an engagement board stops to a shell previously when the path of a hand plate is larger than a shell inside diameter, in such a case, bundle lump cost (only space where pressure welding secure closing of the ring shape sealant is carried out thoroughly) is held

between a hand plate and an edge of a winding instrument, and dustproof completeness is made to plan by bundle lump by putting protection-against-dust covering like gum boiled and twisted between an edge of a winding instrument and a hand plate

A sealant is infixed in the screwing shaft material circumference side between an engagement board and a supporting plate, and when a supporting plate slides to a screwing shaft material by using a spacer etc. appropriately, the blockade seal of the crevice between these screwing shaft materials is carried out.

If shell internal pressure acts on a blocking mechanism by the locked state of an engagement board, it will be further increased by the stop power to a shell with each engagement board.

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EXAMPLE

(EXAMPLE)

As [show / although based on this invention which was described above / the 1st composition relation / in Drawing 1 and Drawing 2nd / the / and 3], The ring shape sealant 4 which crookedness bulge was made to be carried out between the movable hand plates 3 radially in shaft orientations to the supporting plate 2 and this screwing shaft material 1 which are fixed to a bolt or the screwing shaft material 1 like **** is made to infix, It is the same as the advanced technology by this invention person etc. who mentioned above to press to a supporting plate 2-way by the nut member 5 which screwed the above-mentioned hand plate 3 in said screwing shaft material 1, to carry out crookedness bulge of the ring shape sealant 4, and to carry out a seal itself, For this reason, **** of the slope sections 2a and 3a which countered the plane of composition over said ring shape sealant 4 of the above mentioned supporting plate 2 and the hand plate 3 is formed. It is what allocated the infixation carrier member 6 and two or more engagement boards 7 between the hand plate 3 and the nut member 5 which were described above in the thing of the above composition in this invention, As shown in Drawing 2nd [the] and 3 at the peripheral part of the above mentioned engagement board 7, each engagement board 7 is held to a prescribed position, And the elastic accouplement 8 like the gum for making an extension operation perform with the ** pressure by the nut member 5 is attached, the tip part of the screwing shaft material 1 which the supporting plate 2 described above as shown in Drawing 1 in this case -- the weld zone 12 -- like -- it comes out, and it is being fixed and the washer member 9 is infixied between the nut member 5 and each engagement board 7.

As opposed to enabling it to set up in arbitrary parts in a shell in what another composition relation by this invention is shown in Drawing 4, namely, was shown in Drawing 1-3, It is made to set up especially to an edge of a winding instrument in a thing of this Drawing 4, Two or more engagement boards 7 connected so that a peripheral part might be held to a prescribed

position by the elastic accouplement 8 like what was shown in Drawing 1-3 to the screwing shaft material 1 which has the head 11 have received an inner circumference side edge part in the above-mentioned head 11, The supporting plate 2, the ring shape sealant 4, and the hand plate 3 are allocated one by one to such an engagement board 7, the covering section 3b which carries out ** arrival to the hand plate 3 at an end of the shell 10 is formed in one, and the nut member 5 is screwed to the screwing shaft material 1 projected to the exterior of the shell 10. said engagement board 7 and a supporting plate which have received in the head 11 in this case -- two portion forward power of the hand plate 3 inside the ring shape sealant 4, considering being that into which a fluid in a pipe advances, [receive and] The spacer 13 which carries out the compression seal of the sealant 14 like an O ring with which the screwing shaft material 1 side of the supporting plate 2 was equipped, and this sealant 14 is formed, That is, the curvature seal of the ring shape sealant 4 is carried out by pushing forward by the nut member 5 of the hand plate 3, and it changes so that this sealant 14 may also be compressed and the seal of the gap of the screwing axostyle 1 and the supporting plate 2 may be carried out. Furthermore, another composition relation of this invention which does not use the above spacers 13 is shown in Drawing 5. Namely, although it is the same as that of a thing of Drawing 4 mentioned above to change so that a binding seal may be carried out by the nut member 5 which inserted the engagement board 7, the supporting plate 2, the ring shape sealant 4, and the hand plate 3 to the screwing axostyle 1 which has the head 11, and engaged with this screwing shaft material 1, The elastic accouplement 8 and said sealant 14 for holding each arranging position of the above-mentioned engagement board 7 in the case of this Drawing 5 are formed in one, it being the thing like gum out of which it came and which was formed as one, and spacer 13 portion in a thing of Drawing 4 especially about sealant 14 portion, as well as the inside of the hand plate 3, the protection-against-dust spacer 15 like gum boiled and depended is formed, and it changes so that the seal of between ends of the shell 10 may be carried out in binding by the nut member 5 and earth and sand etc. may not advance into an inner structure portion by burial in a soil layer, either.

It is in ** to join by the both-sides corner 7a, as said engagement board 7 is shown in Drawing 6 to the inner surface of the shell 10 in the case where the rectangular sheet which is a general gestalt is adopted, at the time of binding by the nut member 5, Therefore, what has hardness high in construction material is preferred, for example, when hardening steel is adopted, inside, it eats to the inner surface of the shell 10 which is a common steel pipe, and stops, and exact engagement is obtained. moreover -- in the thing of composition of that the engagement board 7 is engaged by the both-sides corner 7a as mentioned above -- the number of the engagement boards 7 -- it being in ** that how influences concrete engaging force, and, It is chief in order that increasing the number of allocation of the engagement board 7 from such a reason may bear the high voltage conditions in a pipe, when the shell 10 which should be

applied especially is a major diameter. Namely, as it is shown in Drawing 7 to such a major-diameter shell for adopting the thing of said Drawing 5, the receiving board member 21 is independently attached to the head 11 of the screwing shaft material 1, If the end face of the engagement board 7 is made to support movably in the stage-like receiving part 21a formed in the circumference side of this receiving board member 21 and it does in this way, it will become possible to carry out allocation bearing of the engagement board 7 of considerable a large number in the major-diameter-ized stage-like receiving part 21a from the head 11. When it does in this way and becomes a major-diameter pipe, considerable in the bottom, a portion adopts the sealant 24 of a different body as the spacer 13 of Drawing 4 in what was shown in Drawing 5, and the sealant 14.

About the fitting state of each engagement board 7 to the elastic accouplement 8, the section structure is shown in Drawing 8, That by which each engagement board 7 was laid underground in the field of the elastic accouplement 8 as shown in the figure (a), or -- any of **** of that by which each engagement board 7 is attached on the field of the elastic accouplement 8 as shown in the figure (b) being sufficient, and receiving the elastic accouplement 8 like slab in which it comes out and each of a certain engagement board 7 is gum -- baking -- like -- it comes out and is attached firmly stably.

As a resisting pressure blocking mechanism which should be applied to steel pipe 10 end 4 mm in inside diameter with the outer diameter of 5 mm as a concrete example of design manufacture although based on this invention, It is what adopts that by which the through-hole with a diameter of 6 mm was formed in that axial center with the outer diameter of 15 mm as the screwing shaft material 1, namely, takes out a shell gas stream object outside via this through-hole, and was made to carry out test measurement of that pressure thru/or presentation, As the supporting plate 2 and the hand plate 3, what fabricated the 3-mm-thick steel plate like a graphic display is used, As for the ring shape sealant 4, the thickness of an omitted portion (portion which carried out thinning most) adopts the rubber material of hardness JIS HS 50 at 6 mm, As the engagement board 6 to these, length is 19 mm in 8 mm, and width a 3.2-mm-thick soft steel steel plate as shown in Drawing 6. What attached what was printed and pasted up on the elastic accouplement 8 of gum so that it might be located in six-sheet regular intervals as shown in Drawing 5 was adopted, and it bound with the bottom of the conditions to which humidity of the inner surface of said steel pipe 10 was carried out with water enough by the nut member 5 which is a wing nut. Namely, a shell is connected to the portion which did in this way and extended from the nut member 5 of the screwing shaft material 1, A blocking mechanism does not move at all the result of having carried out pressure up of the inside of said steel pipe 10 until it reaches 11.2 kg/cm^2 , Therefore, it was checked that it is what whose gas seal by the ring shape sealant 4 is also perfect again, and does not have disclosure, and the result of having ****(ed) was able to be similarly obtained in

the thing of Drawing 1-3 and Drawing 4.

On the other hand, without using said engagement board 7 and elastic accouplement 8 to the same steel pipe 10 as the above, Binding secure closing is similarly carried out about what infixed the ring shape sealant 4 between the supporting plate 2 and the hand plate 3, A blocking mechanism is extruded, when pressure up of the inside of the steel pipe 10 is carried out and an inner surface of the steel pipe 10 exceeds 2.3 kg/cm^2 as it is an absolute dry condition, Therefore, in under conditions to which humidity of the inner surface of the steel pipe 10 was carried out with water, it slides by 1.3 kg/cm^2 to leakage being produced, and disclosure is generated.

That is, by adopting an engagement board, it is checked that it is what may improve blockade performance also eight to 9 times under a humid condition which a blocking mechanism tends to slide, what is depended on this invention is possible also for, of course adopting this as two or more steps, and it can improve resisting pressure performance-like proportionally. Anyway, it knew that a stable and advanced resisting pressure blockade could be realized by compact composition.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

The sectional view in which a drawing's showing the technical contents of this invention, and showing one composition relation according [Drawing 1] to this invention, Drawing 2 the front view and Drawing 3 about the engagement board and an elastic accouplement The sectional view, The sectional view as Drawing 1 showing other composition relations by this invention where Drawing 4 is the same, Drawing 1st [the] and 4 showing another composition relation furthermore Drawing 5 was based on this invention, and the same sectional view, The sectional view about an engagement plate part in case the front view in which Drawing 6 showed the allocation relation of the engagement board, and Drawing 7 apply comparatively what is depended on the form of said Drawing 5 to the shell of a major diameter, and Drawing 8 are sectional views showing some of the mounting state of the piece of engagement to an elastic accouplement.

In these drawings, 1 very a screwing shaft material and 2 a supporting plate and 3 A hand plate, 4 -- a ring shape sealant and 5 -- in a nut member and 6, an engagement board and 8, a shell and 11, a sealant and 21 show a receiving board member, 21a shows the stage-like receiving part, and, as for an elastic accouplement and 9, the head of a screwing shaft material and 13 show [as for a washer member and 10] a sealant for an infixation carrier member and 7 24, as for a spacer and 14.

[Translation done.]

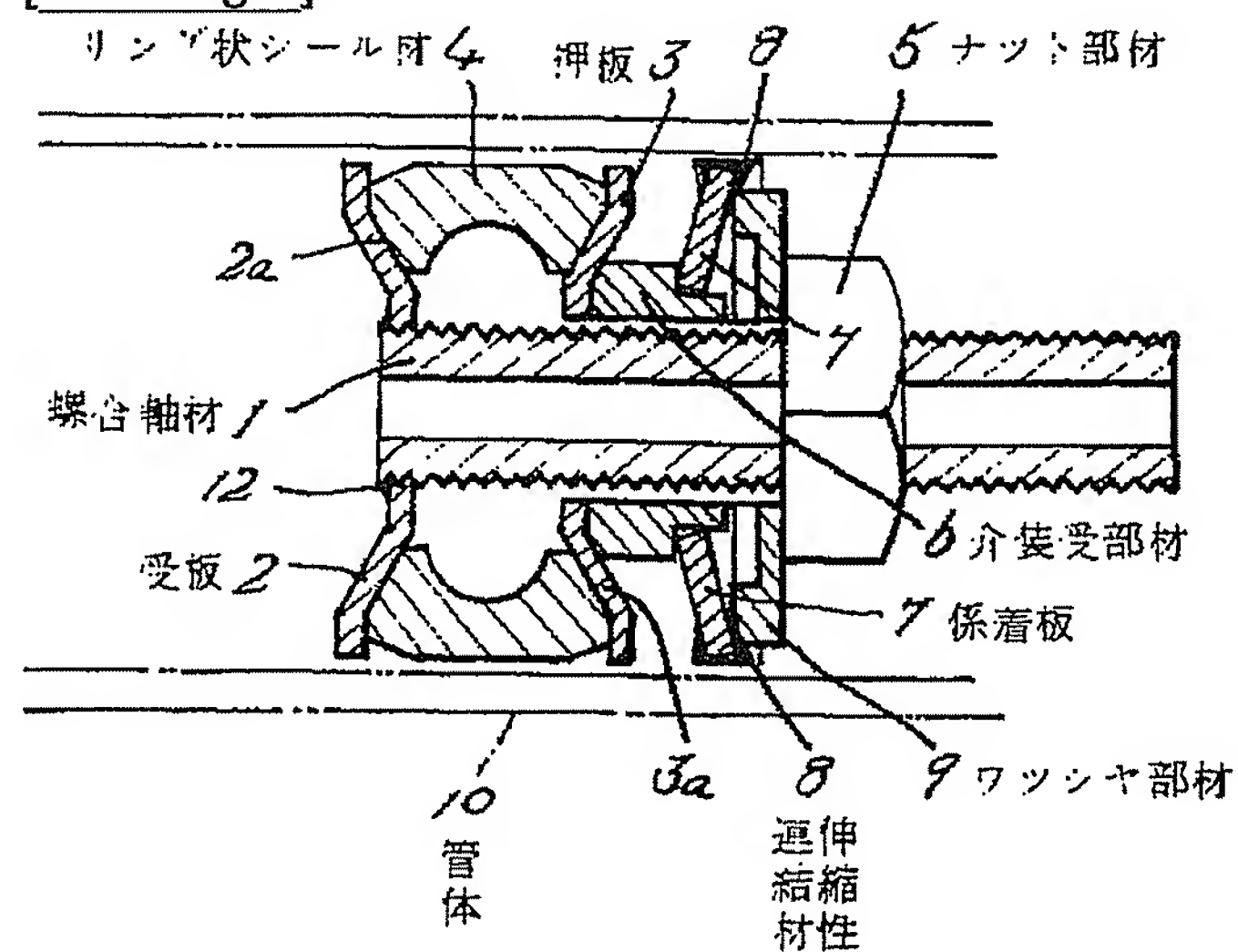
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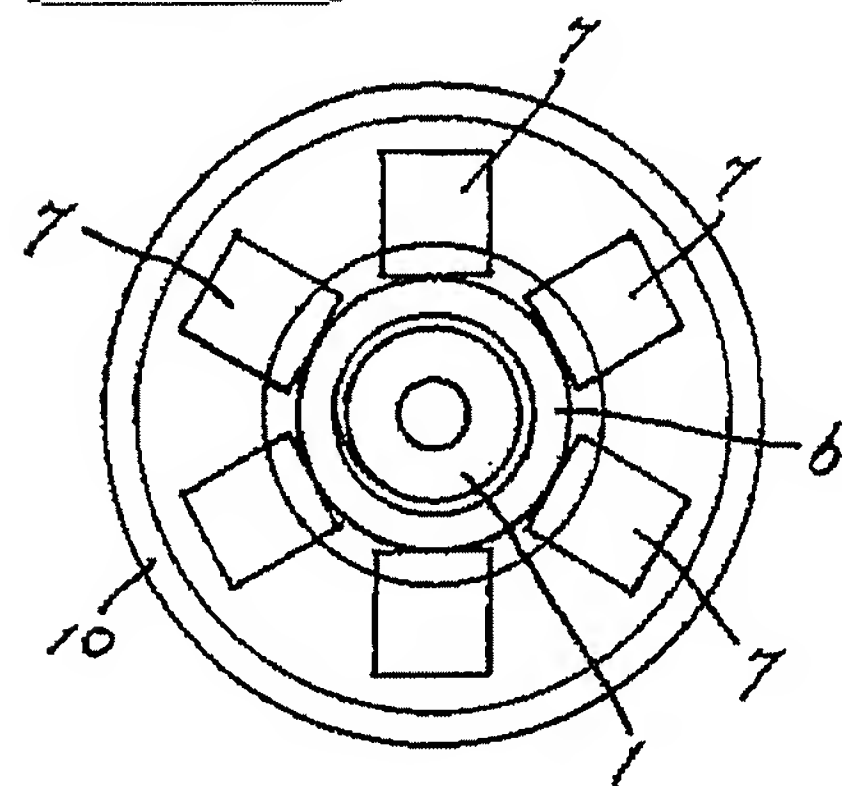
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DRAWINGS

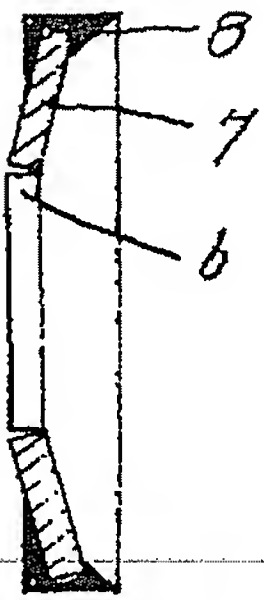
[Drawing 1]



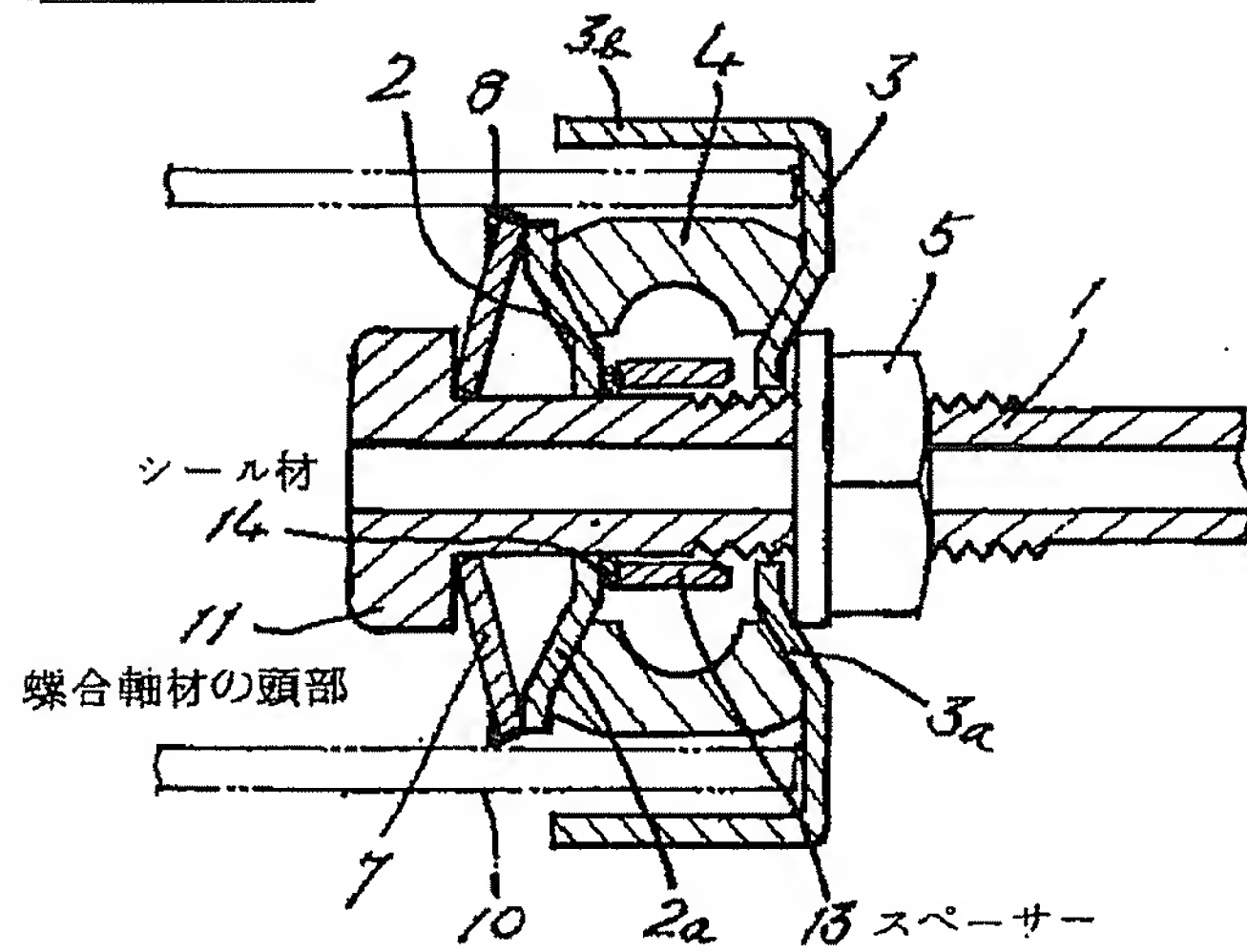
[Drawing 2]



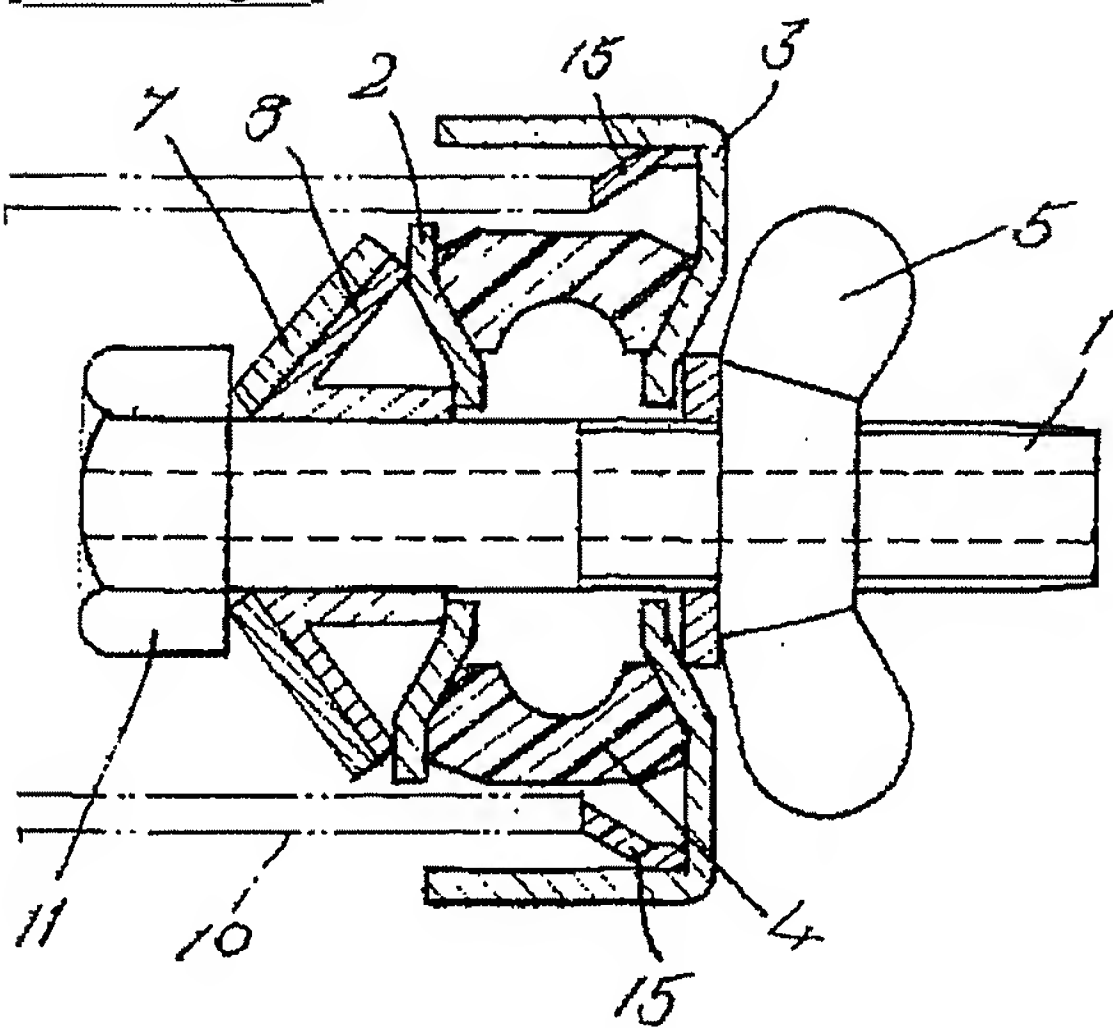
[Drawing 3]



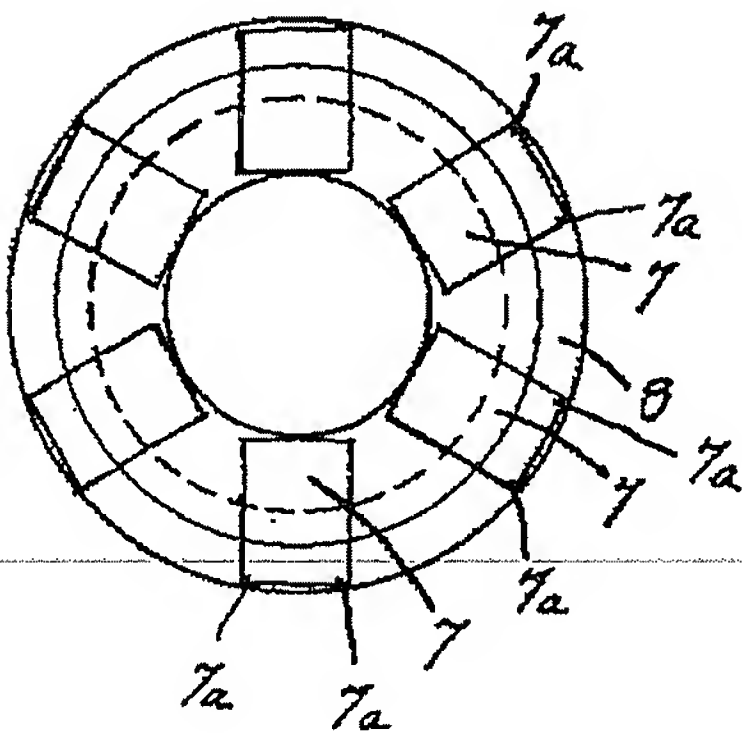
[Drawing 4]



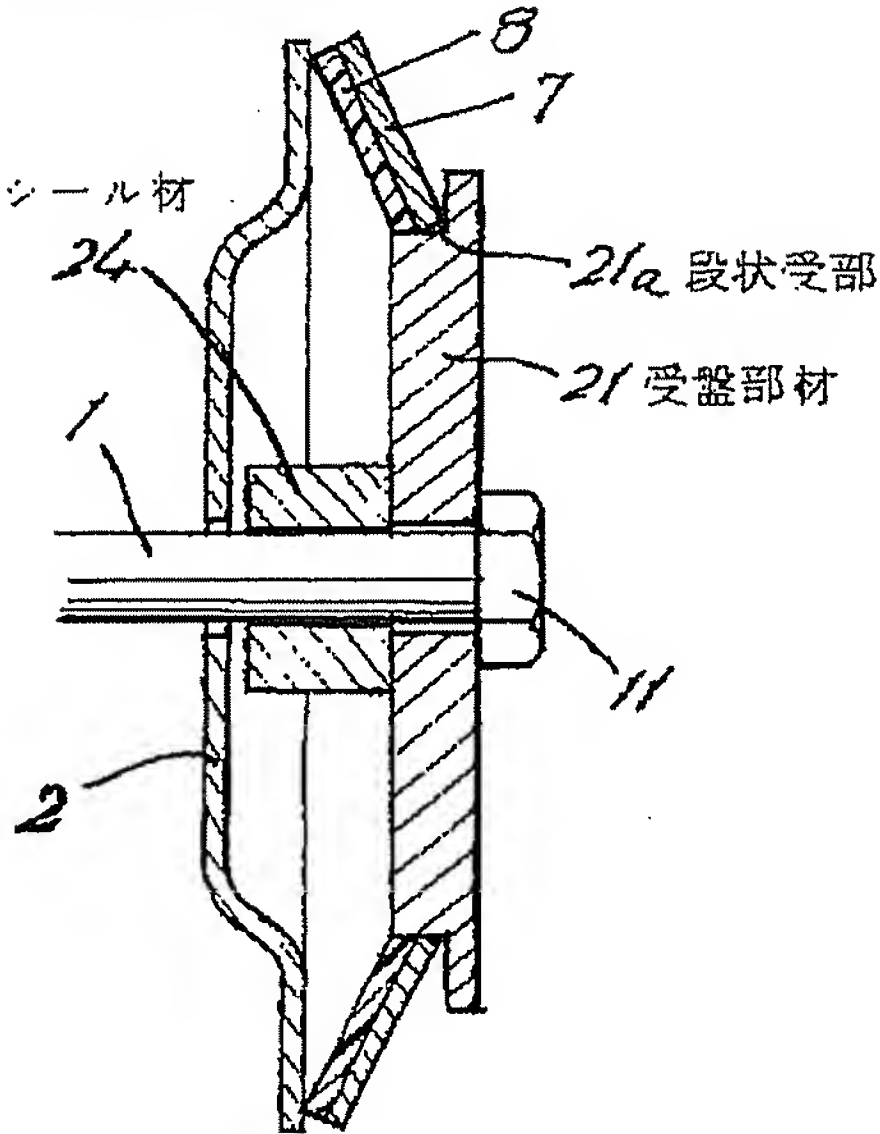
[Drawing 5]



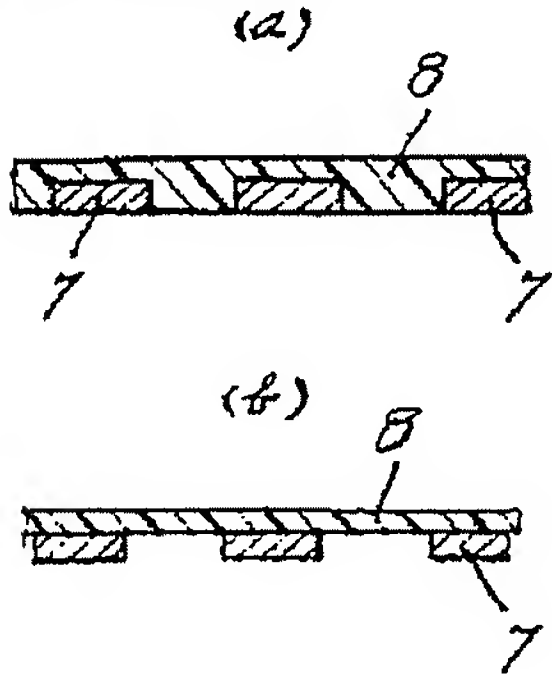
[Drawing 6]



[Drawing 7]



[Drawing 8]



[Translation done.]